ORIGINAL RESEARCH

Improving the Reporting of Primary Care Research: An International Survey of Researchers

William R. Phillips, MD, MPH, Elizabeth Sturgiss, BMed, FRACGP, MPH, PhD, Liesbeth Hunik, MD, Paul Glasziou, MBBS, FRACGP, PhD, Tim olde Hartman, MD, PhD, Aaron Orkin, MD, MSc, MPH, CCFP(EM), FRCPC, Joanne Reeve, BClinSci, MBChB, MPH, PhD, FRCGP, Grant M. Russell, MBBS, MFM, FRACGP, PhD, and Chris van Weel, MD, PhD, FRCGP (Hon), FRACGP (Hon)

Purpose: **To assess opportunities to improve reporting of primary care (PC) research to better meet the needs of its varied users.**

Methods: **International, interprofessional online survey of PC researchers and users, 2018 to 2019. Respondents used Likert scales to rate frequency of difficulties in interpreting, synthesizing, and applying PC research reports. Free-text short answers were categorized by template analysis to record experiences, concerns, and suggestions. Areas of need were checked across existing reporting guidelines.**

Results: **Survey yielded 255 respondents across 24 nations, including 138 women (54.1%), 169 physicians (60%), 32 scientists (11%), 20 educators (7%), and 18 public health professionals (6%). Overall, 37.4% indicated difficulties using PC research reports "50% or more of the time." The most common problems were synthesizing findings (58%) and assessing generalizability (42%). Difficulty was reported by 49% for qualitative, 46% for mixed methods, and 38% for observational research. Most users wanted richer reporting of theoretical foundation (53.7%); teams, roles, and organization of care (53.4%); and patient involvement in the research process (52.7%). Few reported difficulties with ethics or disclosure of funding or conflicts. Free-text answers described special challenges in reporting PC research: context of clinical care and setting; practical details of interventions; patient-clinician and team relationships; and generalizability, applicability and impact in the great variety of PC settings. Cross-check showed that few current reporting guidelines focus on these needs.**

Conclusions: **Opportunities exist to improve the reporting of PC research to make it more useful for its many users, suggesting a role for a PC research reporting guideline. (J Am Board Fam Med 2021;34:12–21.)**

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Introduction

Primary care (PC) research is a growing discipline with great potential to improve patient care and population health.[1] It is a broad enterprise, including work done by PC investigators, studies conducted in PC settings, and research about PC done by those in

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From the University of Washington, Seattle, WA (WRP); Monash University, Melbourne, Australia (ES, GMR); Radboudumc, Nijmegen, The Netherlands (LH); Bond University, Robina, Australia (PG); Radboud Institute of Health Sciences, Nijmegen, The Netherlands (TOH, CVW); University of Toronto, Toronto, Canada (AO); Hull York Medical School, Hull, UK (JR); Australia National University, Canberra, Australia (CVW).

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other specialties and disciplines. As with PC practice, PC research has developed its own perspectives and methods to meet its special challenges.[2] It uses a broad array of research methods to study the universe of health problems across a wide-ranging variety of clinical and community settings, emphasizing patient-centered, problem-oriented, relationship-based approaches. PC research addresses not only direct clinical care, but also diverse subjects, including communication, health systems, implementation, evaluation, public health sciences, education, public policy, and the biopsychosocial model. PC research embraces many partners and serves many users.

Investigators across many fields recognize opportunities to improve the planning, conduct, and reporting of research.[3] The EQUATOR network[4] (https://www.equator-network.org) catalogs the growing array of research reporting guidelines aimed to improve the planning, conduct, dissemination, implementation, synthesis, and evaluation of research; increase the translation, adoption, and evaluation of new knowledge and improvements in patient care and health care systems; reduce delays from bench to bedside to patients and communities; reduce research waste; and enhance the impact and value.[5] Reporting guidelines increasingly influence editorial policies of peer-reviewed journals.[6–8]

The EQUATOR Network provides a core set of reporting guidelines that focus on key research methods, but the bulk of the 432 guidelines are specific to disciplines or subjects. Yet, none focuses on PC.

PC is a distinct discipline, with specific needs for knowledge and research, and effective dissemination of findings is necessary to improve practice, patient outcomes and population health.

However, little is known about the quality of PC research reporting or how well it meets the specific needs of its varied users: clinicians, patients and families, researchers, educators, policy makers, and communities. We can find in the published literature no reporting guidelines focused on PC research and very limited research on the quality or content of reports of PC research.

Our long-term goal is to formulate guidance to help improve the reporting of PC research, recognizing the distinct contribution of PC to patient care and health care systems and optimizing the quality and impact of research as a core component of effective PC. This initial stage in our work has 2 specific aims. First, to assess the usefulness of, and characterize problem areas with, the current reporting of PC research. Second, to gather suggestions, topics, and elements for possible inclusion in such guidance. Informed by these findings, we plan a broad-based Delphi study to identify and prioritize items for PC research reports.

To fill these knowledge gaps, we conducted an international, interprofessional, interspecialty, online survey of PC researchers, educators, and leaders to better understand how often current PC research reports are problematic and to explore opportunities to improve the reporting of PC research. We also reviewed existing reporting EQUATOR network guidelines to assess coverage of the needs reported by PC researchers.

Methods

We conducted an online survey using Qualtrics XM software (Qualtrics, Seattle, WA), October 2018 to March 2019. The questionnaire recorded demographic information, research training and experience, profession and specialty, years since completion of training, and research role. For this survey, we offered the following working definitions. "Primary care research" is original scholarly work on, in, or about PC. "Research reporting" is final reports published in peer-reviewed professional and scientific journals.

We drafted survey questions to assess experiences, problems, limitations, concerns, unmet user needs, and opportunities for improving the reporting of PC research. Questions came from our international group of experienced PC investigators, authors, reviewers, editors, readers, and clinicians. Iterative drafts aimed to capture the most common and important functions of research reports. We field-tested several drafts with a multidisciplinary, international group of PC academics and clinicians, to improve readability, construct validity, and comprehension of scale items. This test group included a variety of potential survey respondents from 7 nations, including physicians, nurses, mental health clinicians and public health professionals; family medicine or general

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Corresponding author: William R. Phillips, MD, MPH, Department of Family Medicine, Box 356390, University of Washington, Seattle, WA 98195 (E-mail: wphllps@uw.edu).

practice academics, researchers, practitioners, and educators; PC researchers, PhDs, social scientists, and other research team members.

We asked respondents to estimate the frequency of encountering problems reading reports of PC research, using a 5-point Likert scale (always, most of the time, about half the time, sometimes, never, or not applicable/not sure). (See questionnaire, Appendix 1.) The questions covered potential problems with application and translation of study findings; study designs; research methods; and the reporting of conflicts of interest, funding, and bias.

After each section, we invited open-ended short-text comments on all aspects of PC research reporting, asked for specific examples of concerns, and invited suggestions for improvement.

We distributed the link to the online survey widely, starting with e-mails and Web site posts on many national and international PC research organizations, plus social media. We sent E-mail invitations with the survey link to individuals and/or organizations in over 54 nations on 6 continents. To increase and broaden the study population, we used a snowball sampling method,[9] asking respondents to forward the survey link to PC colleagues, emphasizing the recruiting of those outside of North America, nonclinician researchers, and clinicians from diverse PC disciplines.

For data analysis, we used descriptive statistics to summarize respondent characteristics and their Likert scale responses.

To describe the short free-form comments, we used a template analysis approach[10] and word-processing software. Our initial template was based on the traditional components of the research report. The coding team included an experienced family physician-researcher (United States), an early career family physician with research PhD (Australia), a final-year medical student entering a clinical-PhD program in PC (Netherlands), and a final-year medical student (Australia).

We each categorized all comments from the first open-ended question and refined the category list through discussion. Then 2 researchers independently categorized comments from each of the open-ended questions and the team met to discuss and resolve any differences. We added or coalesced categories as needed to include factors that emerged from the data. Using the revised category list and an iterative process, we repeated the process for each question and the comments of all respondents, with each comment reviewed by at least 2 team members and discussions to resolve any differences. The entire investigator group offered final feedback on the analyses.

After we identified the needs voiced by survey respondents, we reviewed published reporting guidelines to check if they address similar areas of concern. Focusing on EQUATOR Network guidelines on research methods most commonly used in PC research, 2 reviewers identified components that seem to address concerns about research reporting similar to those voiced by our respondents. (See Appendix 2 for details of methods and results.)

This study was granted a waiver by the Human Subjects Division of the University of Washington, Seattle, WA. The survey was anonymous, and participants gave informed consent when they proceeded with the online survey.

Results

Our survey yielded 255 respondents from 24 nations, including: 54.1% (138) women, 64% (159) with doctoral degrees, 60% (169) physicians, 11% (32) scientists, 7% (20) educators, and 6% (18) public health professionals. Just over half were from North America, 55.6% (132), with 20% (47) from Australia, 15.6% (37) from Europe, and 28.7% (68) from other countries. (See Table 1.)

Difficulties with Research Reports

Respondents reported the frequency of experiencing difficulty when using reports of both general health research and PC research (see Table 2 and Appendix 3 for details). Here, we focus on areas in which respondents reported it is "difficult at least half the time." Overall, 74 of respondents who answered the question (37.4%) said that PC research reports caused problems for their work. Fully 58% (n = 109) found difficulty synthesizing findings across studies, and 83 respondents (41.9%) found difficulty assessing generalizability. Many found reporting to be insufficient for specific methods: 49% (n = 84) for qualitative research, 46% (n = 75) for mixed methods, and 38% (n = 65) for cohort/observational research. The elements that were most commonly reported as missing were the theoretical basis of research (54%, n = 87); description of teams, roles and organizations of care (53%, n = 86); and how patients were involved in the research process (53%, n = 78).

Table 1. Characteristics of Survey Respondents

Characteristic	Number	%
Total respondents	255	100
Gender (n = 255 answering)		
Male	114	45
Female	138	54
Other gender categories*	3	1
Nationality (n = 237 answering)		
United States of America	112	47
Australia	47	20
Canada	20	8
United Kingdom	13	5
Netherlands	12	5
Europe (other)	12	5
South America	11	5
Oceania (other)	5	2
Asia	5	2
Not answered	18	
Primary profession (multiple options possible, n = 254 answering)		
Physician	169	67
Scientist	32	13
Educator	20	8
Public Health	18	7
Nursing and nursing practice	9	4
Other (eg, pharmacy, administration, dietitian, behavioral science)	34	13
Types of physicians (total physicians = 169; N = 168 answering)		
Family medicine/general practice	154	92
Internal medicine (including subspecialties)	6	4
Other (eg, obstetrics/gynecology, pediatrics, sports medicine)	8	5
Not answered	1	
Level of research experience (n = 252 answering)		
Novice	39	15
Intermediate	103	41
Advanced	110	44
Not answered	3	
Highest research degree obtained (n = 247 answering)		
Bachelor's degree	10	4
Master's degree	52	21
Doctoral degree (eg, PhD, MD)	159	64
None	21	9
Other	5	2
Not answered	8	
Years since completion of professional training (n = 245 answering)		
0 to 9	57	22
10 to 19	52	20
20 to 29	53	21
30 to 39	56	22
40 to 49	23	9
50 to 59	4	2
Not answered	10	4
Roles played in PC research (more than one option possible, n = 255)		
Research/investigator	205	80
Clinician	140	55
Journal reviewer	130	51
Educator	123	48
Editor	42	16
Manager	40	16
Methodologist	40	16
Community member/patient	20	8
Policymaker	16	6
Trainee	14	5
Other (eg, mentor, administrator)	12	5

PC, primary care.
Online survey October 2018 to 2019.
*Other gender category includes non-binary/third gender, prefer to self identify, and prefer not to answer.

Lower percentages of respondents cited problems with other aspects of PC research reports but over 20% of respondents noted problems with most aspects of PC research reporting "about half or more than half of the time" (Table 2.)

Fewer respondents indicated insufficiencies in the reporting of the role of funders (21%), potential conflicts of interest (18%), ethical conduct of research, and institutional approval (7%).

Respondent Comments

Respondent comments about the reporting of PC research are organized into categories and subcategories, summarized in Table 3, with exemplar quotations. They generally followed the stages of the research process and the conventional format of research reports.

One observation ran through the comments of many respondents across the questions: PC is different. Many respondents emphasized that PC—practice, research and research reporting—is different from other health care and medical practice.

> "There is a tendency for PC research to be more likely to involve multimorbidity, multiple disciplines, social determinants of health, and community-based sampling. (FP; clinician, editor, reviewer, manager, researcher; Australia; M)

"Purely because it is setting specific and refers to a much broader population than specialty care." (Health services researcher; community member/patient, reviewer, methodologist, researcher; UK; F)

"PC has many contexts, types of practitioners and also takes patients into account-patient-centered care and factors in multimorbidities and preventative medicine. It is much more complex than hospital care which mostly is single health issue with a fairly passive patient." (FP; advanced researcher/educator; Australia; F)

A few respondents did not see much difference between the reporting of PC research and medical research in general.

"I don't really think the reporting is much different to equivalent research designs in other settings. It's just that there are few randomized controlled trials (RCTs) in PC settings, so often the findings are descriptive." (FP; advanced researcher/educator; Australia; F)

A few questioned the need for a new reporting guideline for PC research.

"None of the above seem unique to PC research in any way and are covered already in standards and journal requirements." (FP; advanced researcher/educator; USA; M)

One respondent worried that PC research was too broad to lend itself to a reporting guideline.

"I am not sure of the value of looking for basic consistencies across PC research when the field is so big, eclectic and covering a huge range of topics, methods and contexts. Sometimes reporting will be good sometimes not." (FP; advanced researcher/educator; New Zealand; M)

However, some highlighted the need for specific guidance for PC research.

"It is not much different now but needs to be. Given the complexity of the intervention and of the patients, we need to know far more details of the research than are usually reported." (FP; advanced researcher/educator, reviewer; Canada; M)

One respondent called for PC research to lead the way in improving the conduct and reporting of medical research.

"There is a more fundamental problem in medical publication than PC. As Ionnaidis has pointed out, most published medical research findings are most likely false. The poor study designs, misinterpreted analyses, small or unrepresentative sample sizes, bias due to industry or academic reputation, and outright fraud to achieve publication are some of the reasons that "the evidence (for most of medicine) sucks." Shame on us if we perpetuate these inadequacies in PC." (FP; advanced researcher/educator, policymaker; USA; M)

Other Reporting Guidelines

Using these comment categories summarized in Table 3, we scanned the EQUATOR Network reporting guidelines most relevant to PC research and found that many of the concerns voiced by our respondents are not adequately addressed by currently published guidelines (Appendix 2).

Discussion

This is the first survey published on user experience with PC research reports. We identified opportunities for improvement, some specific to PC and others applicable to health research more generally.

The PC researchers we surveyed reported concerns about the ways medical research is reported and they identified areas where PC research deserves special attention to issues often not well reported in medical research. These included theoretical foundations, the context of interventions and care, and patient-clinician and team relationships. Respondents recommended changes for improving the reports of PC research to make them more valid, useful, generalizable, and applicable in practice. Our findings suggest that changes in reporting format and dissemination strategies will be needed to meet these needs.

Most respondents (52%) want better description and documentation of the involvement of patients and communities in the studies reported, citing problems half or more of the time. This may reflect a commitment to participation and partnership in the research process among the PC research community.

Optimizing PC research reports—their use, translation and application—is essential if we are to realize the potential of PC research to empower the translation of new knowledge into improved patient care and health outcomes through more effective application of findings into routine PC practice.[1]

These findings add to the growing literature on deficiencies with the reporting of research across a variety of research fields.[11] Our findings should not be interpreted to suggest that PC research reporting is more or less problematic than research in other fields. We are seeking to understand how to help investigators, reviewers, and editors improve the reporting of PC research for all its many users

Table 2. Areas of Primary Care Research Reports Where Respondents Encounter Problems "about Half or More of the Time"

Question*	Respondents Answering†	Encounter Problems†‡ N (%)
Overall, how often does the reporting of PC research cause problems for your work?	198	74 (37.4)
How often do reports of primary care research make it difficult for you to:		
Synthesize findings across studies	188	109 (58.0)
Apply the findings to primary care policy	189	97 (51.3)
Replicate research findings	168	83 (49.4)
Assess the generalizability/transportability of the findings to my patients, practice or community	198	83 (41.9)
Identify specific actions that apply to primary care patient care/practice	200	81 (40.5)
Apply the findings to primary care education	194	74 (38.1)
Apply the findings to further primary care research	193	60 (31.1)
How often have you found reporting to be insufficient for these different types of PC research?		
Qualitative studies	170	84 (49.4)
Mixed-methods studies	163	75 (46)
Single-arm intervention trials	145	65 (44.8)
Randomized controlled trials	164	71 (43.3)
Surveys	158	65 (41.1)
Cohort studies	171	65 (38)
Meta-analysis	164	56 (34.1)
Case study research	146	47 (32.2)
Systematic reviews	169	53 (31.4)
In general, how often is the reporting of PC research problematic in these areas?		
Authorship and relative contributions of research team members	157	45 (28.7)
Role of funders in research and reporting	163	35 (21.5)
Potential conflicts of interest of researchers/authors	158	29 (18.4)
Ethical conduct of research and institutional approval	163	12 (7.4)
How often do you see problems with the reporting of these components of PC research?		
Theoretical underpinnings of the research	162	87 (53.7)
Description of teams, roles, and organization of care	161	86 (53.4)
Involvement of patients, communities, others in the research process	148	78 (52.3)
Reporting effect sizes	153	76 (49.7)
Description of usual care	161	78 (48.4)
Description of clinicians/providers	163	76 (46.6)
Selection of the clinical sites, clinicians, or study locations	161	75 (46.6)
Relationship between researchers and patients/participants	145	65 (44.8)
Description of place/setting of research	160	62 (38.8)
Analysis methods—mixed methods	151	58 (38.4)
Selection of the patients/subjects/participants	163	62 (38)
Qualitative methods	159	57 (35.8)
Description of patients/subjects/participants	162	57 (35.2)
Analysis methods—qualitative	155	53 (34.2)
Measurement tools used	160	54 (33.8)
Synthesis methods in systematic reviews or meta-analysis	143	47 (32.9)
Blinding procedure	154	50 (32.5)

Continued

Table 2. Continued

Question*	Respondents Answering†	Encounter Problems†‡ N (%)
Description of control/comparison groups	161	51 (31.7)
Reporting uncertainty bands (eg, CIs)	152	46 (30.3)
Description of interventions	162	48 (29.6)
Purpose and context of the research question	166	48 (28.9)
Study registration	135	37 (27.4)
Randomization including allocation concealment	148	40 (27)
Analysis methods—statistical	158	41 (25.9)
Definition of the health problems/conditions under study	161	35 (21.7)
Description of interventions	162	48 (29.6)
Purpose and context of the research question	166	48 (28.9)
Study registration	135	37 (27.4)
Randomization including allocation concealment	148	40 (27)
Analysis methods—statistical	158	41 (25.9)
Definition of the health problems/conditions under study	161	35 (21.7)

PC, primary care; CI, confidence interval.
Online survey October 2018 to 2019.
See Appendix 3 for more detailed results.
In each section, items are listed in rank order by percent, not in order of presentation on the questionnaire.
*Answers were on a five-point Likert scale with frequency measures. Responses were not compulsory to move forward in the survey.
†For each question, "Respondents Answering," is the number of survey respondents who answered the question with Likert scale scores. "NA/Not Sure" responses are combined with no answers and are not shown. They total 255 – Respondents Answering.
‡"About half or more than half of the time."

working in diverse settings.[12] Guidance that focuses on the issues of particular concern in PC—context, relationships, theory, and applicability—may also offer insights to help improve the reporting of health research more broadly.

Our survey focused on identifying potential difficulties and did not document the strengths of current research and reporting practices in PC. Our study also focused on the content of published reports of PC research. Further research can explore the best alternative formats and dissemination strategies to make research findings most accessible to the full range of users, including practitioners, patients, and policy makers.

This study has limitations associated with online surveys, informal sampling methods, Likert scales and free-text responses. We specified definitions for general health and PC research, but some respondents may have used other designations or had difficulty differentiating these 2 categories. Likert scales may lead to blunting of answers, but we did not observe ceiling effects. Our questions about the frequency of encountering problems may not be the most sensitive way to measure users' satisfaction and experience with research reports. The short comment format did not allow for deep questioning of participants about the topic. However, we had more than 300 free-text responses with many participants writing in detail about their experiences and concerns. The long questionnaire risked survey fatigue, as a few respondents noted in their comments. We observed some fall-off in response to later questions, but we calculated all answer percentages using the denominators of responses to each question (see Table 2 and Appendix 3).

We successfully engaged an expert group of producers and users of PC research. Respondents were mostly doctorally qualified researchers, so their responses may not be representative of the broader population using reports of PC research, including clinicians, policy makers and patients. Our respondents cannot be considered representative of all individuals and groups involved in PC research. With our purposeful and snowball sampling methods, we intentionally sought broad participation and inclusive numerators at the expense of defined populations and precise denominators. This approach served our purpose of capturing diverse experiences and wide-ranging suggestions to inform our Delphi process.

Table 3. Categories of Comments on Reporting of PC Research

Category
Sub-Category
*Summary comment**
•"Respondent quotation." (respondent characteristics†)

PC RESEARCH IS DIFFERENT
Recognition and adaptation to the special character of PC practice and PC research

PLANNING RESEARCH
Description of the way clinicians, patients and community members are involved throughout the research process
•"Every study done in or on PC should have PC experts involved from the initial stages and throughout the process to the final report writing. The same might be proposed for patients or members of the communities studied or affected." (FP; clinician, researcher; USA; M)†

Research question
Explanation of the origin of the research question
•"Failing to describe where the research question came from." (FP; clinician, researcher; USA; M)

FUNDING AND INFRASTRUCTURE
Support of non-academic writing and reporting
•"Assure a research writer for clinicians." (Behavioral scientist; educator, researcher; USA; F)

CONTEXT OF PC RESEARCH
Description of the complex contexts of patients, problems and practice
•"It's not so much the reporting but the many different contexts that family medicine can represent." (FP; clinician, community member/patient, educator, reviewer, researcher; nation not stated; F)
•"PC has many contexts, types of practitioners and also takes patients into account – patient-centered care and factors in multimorbidities and preventative medicine. (Public health scientist; researcher; Australia, F)

Patient population
Description of patients and populations in practice and community-based research
"PC research includes a wide variety of patients and demographics which are oftentimes not directly applicable to larger studies conducted elsewhere." (FP; researcher, trainee; USA; M)

Problem studied
Recognition and description of illness as it occurs in PC
•"Also the single disease single intervention is not always how patients present. A depressed childhood abuse survivor is not as interested in diabetic dietary guidelines when they are struggling with complex chronic trauma." (FP; clinician, community member/patient, educator, reviewer, researcher; country not stated; F)

Clinicians
Description of clinicians, teams and how they are organized
"Types of clinicians, teams and how they are organized is impt and different. Clustering of pts, clinicians, teams and clinics is impt and often not reported adequately or accounted for in data analysis." (FP; clinician, community member/patient, editor, educator, reviewer, researcher; USA; M)

Types of interventions
Description of pragmatic and complex interventions in PC
•"PC research tends to be more pragmatic and complex interventions and the reporting of methods is often less clear than in other settings." (Pharmacy; reviewer, researcher; Australia; F)

Healthcare setting
Recognition and description of the complex settings of care and work in PC
•"Often the study is locale - and setting - specific, without much description of the ways in which protocol and implementation were shaped by these specifics." (FP; clinician, editor, educator, reviewer; USA; F)
•"Health care setting is often not reported." (FP; clinician, editor, educator, researcher; Norway; F)
•"Contextual factors are critical, yet not often reported. What kind of settings was the research performed in matter."? (FP; journal reviewer, researcher; USA; M)

Relationships
Recognition and description of the relationships among patients, families, clinicians and other members of PC teams
•"Ideally I think relationship building is also important in both the research and the implementation and this should also be reported." (FP; clinician, educator, reviewer, researcher; Australia; F)

RESEARCH METHODS

Study methods
Presentation of the underlying theory behind the research
•"It would be helpful to allow a section for theoretical underpinnings. PC research often lacks theory, although researchers use theories, they may or may not be aware of them. Theories people draw on in designing a study, collecting and analysis data must be made explicit." (Scientist; researcher; Canada, F)

Analytic Methods
Description of how findings and interpretation were checked with study participants
•"It would be great if those undertaking the research reported how they corroborated their interpretation of the findings with study participants. This is rarely reported." (Nursing; educator, reviewer, researcher; New Zealand, F)

DISSEMINATION OF RESEARCH FINDINGS
Presentation of findings in accessible and comprehensible way to patients and communities affected
•"Clinicians and researchers should strive to make their research accessible beyond their peer group, especially when patients and community members were involved in the research. We should strive to make our findings accessible and comprehensible to the communities we serve." (Public health; educator, manager, community member/patient; USA; F)

Continued

Table 3. Continued

Presentation of findings in accessible and comprehensible way to PC clinicians

- "The strengths and drawbacks of reporting depends on the audience. Is the reporting for a solo physician or small group, in which case the reporting is too technical, focusing on research and not practical implementation, and difficult to know how it applies to one's own clinic population? If the audience is researchers, there's different ways to improve the reporting more along the lines of methods and statistics. If the audience is large group practices looking for system or policy solutions, then it gets back to generalizability and implementation." (FP; researcher; USA; F)

Research Reporting

Guidance from PC research reporting guidelines that are different than currently exist

- "We need standards for reporting mixed methods research which don't currently exist (Equator does not have any) - PC research includes lots of mixed methods research. (Health services researcher; methodologist, reviewer, community member/patient; UK, F)
- "A checklist would be beneficial for both peer reviewers and authors. Provide authors a standardized checklist specific to PC research." (Editor; educator, reviewer, methodologist, researcher; Australia, M)

Publication process

Adequate space to adequately space to describe PC research methods, results and context.

- "Good PC research often requires a larger word limit than the usual to describe things like the theoretical stance used, the context of the research setting, how qualitative analysis was undertaken, and in the case of qualitative or mixed methods - space to give results. The solution to this is for more on-line publications to prevail and the encouragement therefore of use of supplementary files." (FP; educator, reviewer, researcher; Australia, F)

IMPLICATIONS OF RESEARCH FINDINGS

Richer discussion of implications for research, practice, education and policy

- "Adding to research reporting, whatever is appropriate: Implications for future research, implications for practice, implications for policy." (FP; researcher; Canada, M)

Generalizability

Description of the context in sufficient detail to assess generalizability to variety of PC contexts

- "It is important to have a good sense of context to assess whether the findings can be used in a different PC context, under which circumstances they can work and when not." (Scientist; researcher; Canada, F)

Relevance

Demonstration that researchers and authors have grounded understanding of PC

- ". . .the SPRINT study and the hypertension guidelines that came from that: authored by specialists who had little understanding of PC." (FP; editor, reviewer, researcher; USA, M)
- "Articles written by specialists for a PC audience are also often flawed because they at best only partially understand PC." (FP; editor, reviewer, manager, researcher; Australia; M)

IMPLEMENTATION OF RESEARCH

Description in details sufficient for implementation, application and translation

- [A major] "national demonstration project. Introduced a team-based approach hard to replicate without the additional support of the grant dollars and institutional infrastructure. Created a model of care that was formidable to the 80% of practices who did not have that infrastructure and are small 2 to 4 clinician practices. Offered no meaningful information about how to make the case with leadership to promote adoption of such a model. Why should a clinician take the risk to hire a full-time employee with no billable hours when already working close the profit line? Answers are actually easy. . . but not reported" (Health services researcher; educator, reviewer, methodologist; USA; F)

ETHICAL ISSUES

Conflicts of interest

Information to help readers better assess potential conflicts of interest

- "It is very difficult to measure the conflict of interest." (W, Hungary, Pharmacy, educator, journal reviewer, researcher)
- "La falta de financiación para este tipo de estudios, hace que los investigadores se asocien a empresas que tienen altos intereses." (Google translation—"The lack of funding for this type of studies, makes researchers associate with companies that have high interests.) (Public health scientist; clinician; Argentina; M)

Authorship

Description of contributions among large, multidisciplinary collaborative author groups

- "PC research often involves collaboration of large groups of individuals from various backgrounds, who often don't discuss or agree upon authorship before starting the research. . .. It becomes very unclear whether some of them actually made any contribution to the study design, analysis, interpretation or writing of the results" (Family Medicine Scientist; methodologist, researcher; Canada, F)

FP, family physician; F, female; M, male; PC, primary care.

Online survey October 2018-2019.

*PC research reports would be more useful if they provided more. . ..

†Respondent identification: (Profession/medical specialty; research roles; nation; gender).

We are currently analyzing a companion survey more focused on an international, interprofessional community of practicing PC clinicians.

Having identified areas for improvement, we believe there is a role for additional guidance for researchers, authors, and journals to improve the usefulness and applicability of PC research reports. Although existing reporting guidelines help with specific methods used in PC research, none adequately addresses the concerns specific to PC patients, problems, and settings, or the rich context of both research and patient care.

Specific areas for improvements in reporting and for new guidance tailored to the needs of PC research are suggested by the categories listed in Table 3. Using data from the current survey and our planned practitioner survey, we plan to conduct a Delphi study to help distill these concerns and suggestions into a priority list of consensus items to help optimize the reporting of PC research.

Conclusions

The findings of this international, interprofessional survey of PC researchers highlight the challenges encountered in interpreting, synthesizing and applying findings in the complex world of PC. Our findings suggest there is a role for added guidance to make reports more valuable to the many users of PC research.

We thank our colleagues around the world who completed and helped disseminate this survey. We thank Ms. Trudy Hong (Monash University, Melbourne, Australia) for her help with data analysis.

To see this article online, please go to: http://jabfm.org/content/34/1/12.full.

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Appendix 1.
Online Questionnaire on Reporting of Primary Care Research, 2018 to 2019

CONSENSUS REPORTING ITEMS FOR STUDIES IN PRIMARY CARE

Needs Assessment Survey

Thank you for contributing to the Consensus Reporting Items for Studies in Primary Care (CRISP) through this Needs Assessment Survey. Our goal is to identify common and important shortcomings in the reporting of primary care research to help improve the quality, reporting and application of research to improve primary care. At this stage, we seek your expertise and opinions about the ways researchers could improve the way they report the research they do in, on and about primary care. The results of this survey will be collated and analyzed by the CRISP team to determine the most common and most important issues with current reporting of primary care research. These results will be used to inform our Delphi study to develop consensus guidelines for reporting primary care research. Your responses to this survey will be anonymous. Your participation is entirely voluntary and you can skip any questions or quit at any time. This study has been reviewed and exempted by the Human Subjects Division of the University of Washington, Seattle, WA, USA. After completing this short questionnaire, you will have the opportunity to volunteer to be an important part of our Delphi Group which will work to develop a consensus list of reporting items in primary care. Thank you.

Dr William R. Phillips, MD, MPH, FAAFP University of Washington, Seattle, WA. USA wphllps@uw.edu

Dr Liz Sturgiss, BMed, PhD, FRACGP, MPH, MForensMed The Australian National University, Canberra, AUST Co-Conveners, CRISP elizabeth. sturgiss@anu.edu.au.

Q2 **Information about you** Please answer the following questions about yourself:Gender

- ○ Woman
- ○ Man
- ○ Non-binary/third gender
- ○ Prefer to self identify:
- ○ Prefer not to answer

Q26 Nation of primary practice

▼ Afghanistan (1) ... Zimbabwe (1357)

Q4 Level of research experience:

- ○ Novice
- ○ Intermediate
- ○ Advanced

Q7 What is your primary profession?

- ☐ Administration
- ☐ Behavioral Science
- ☐ Clinical psychology
- ☐ Counsellor
- ☐ Dentistry/Oral Health
- ☐ Educator
- ☐ Nursing and Nursing practice
- ☐ Occupational Therapy
- ☐ Pharmacy
- ☐ Physician
- ☐ Physician Assistant
- ☐ Physiotherapy
- ☐ Public Health
- ☐ Scientist, please specify type:
- ☐ Social Work
- ☐ Other:

If answered physician, display this question:

Q21 What type of physician are you?

- ○ Addiction Medicine
- ○ Adolescent Medicine
- ○ Emergency Medicine
- ○ Family Medicine/General Practice
- ○ General Surgery
- ○ Geriatrics
- ○ Internal Medicine
- ○ Internal Medicine - Subspecialty
- ○ OB-GYN
- ○ Pediatrics
- ○ Pediatrics - Subspecialty
- ○ Psychiatry
- ○ Sports Medicine
- ○ Surgery - Subspecialty
- ○ Other:

Q9 Do you have a research degree (highest level attained)?

- ○ Bachelor's Degree
- ○ Master's Degree
- ○ Doctoral Degree (e.g. PhD, MD)
- ○ None
- ○ Other: _____

Q10 Number of **years** since completion of professional training: _____
(e.g. clinical training, or higher degree for non-clinicians)

Q11 What role(s) do you play in primary care research? (Check as many as apply)

- ☐ Clinician
- ☐ Community member/patient
- ☐ Editor
- ☐ Educator
- ☐ Journal reviewer
- ☐ Manager
- ☐ Methodologist
- ☐ Policy maker
- ☐ Researcher/Investigator

- [ ] Trainee
- [ ] Other: _____

Q32 First, from your primary care perspective, please give us your opinion on **medical and health care research in general**.

Overall, general medical and health care research is useful to inform primary care.

- ○ Strongly agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly disagree
- ○ Prefer not to answer/ Not sure

Q33 Next, please give us your opinion on medical and health care research done in **primary care settings by primary care researchers**.

Overall, primary care research is useful to inform primary care.

- ○ Strongly agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly disagree
- ○ Prefer not to answer/ Not sure

Q5 **The next section focuses on the reporting of primary care research**

For the purpose of this survey, "primary care research" is defined as original scholarly work on, in or about primary care. "Research reporting" refers to final reports published in peer-reviewed professional and scientific journals.

This section asks about the overall quality of **reporting** of primary care research

Overall, when you read **reports of primary care research**, how often do you have difficulty using the findings?

- ○ Always
- ○ Most of the time
- ○ About half the time
- ○ Sometimes
- ○ Never
- ○ Not applicable/ not sure

Q18 In what ways is the **reporting** of primary care research different to reporting of medical and health care research in general?

Q12 How often do **reports** of primary care research make it difficult for you to:

Assess the generalizability/transportability of the findings to my patients, practice or community
Identify specific actions that apply to primary care patient care/practice
Apply the findings to primary care policy
Apply the findings to primary care education
Apply the findings to further primary care research
Replicate research findings
Synthesize findings across studies
Other: _____

Response matrix				
Always	Most of the time	About half the time	Never	Not applicable not sure
○	○	○	○	○
○	○	○	○	○

Q22 Can you give specific examples of difficulties related to the **reporting** of primary care research?

Q30 Can you cite specific pieces of research that presented difficulties?

Q13 How often have you found **reporting** to be insufficient for these different types of primary care research?

Randomized Controlled Trials
Qualitative studies
Cohort studies/observational studies
Mixed methods studies
Single arm intervention trials
Systematic Reviews
Meta-analysis
Case study research
Surveys
Other: _____

Response matrix				
Always	Most of the time	About half the time	Never	Not applicable not sure
○	○	○	○	○
○	○	○	○	○

Q14 In general, how often is the **reporting** of primary care research problematic in these areas?

Potential conflicts of interest of researchers/authors
Role of funders in research and reporting
Authorship and relative contributions of research team members
Ethical conduct of research and institutional approval
Other: _____

Response matrix				
Always	Most of the time	About half the time	Never	Not applicable not sure
○	○	○	○	○
○	○	○	○	○

Q23 Can you give specific examples related to the above questions?

Q29 Can you cite specific pieces of research that presented difficulties?

Q15 **This section asks about possible problems with the reporting of primary care research**

How often do you see problems with the **reporting** of these components of primary care research?

Purpose and context of the research question
Theoretical underpinnings of the research
Selection of the clinical sites, clinicians or study locations
Description of place/setting of research
Selection of the patients/subjects/participants
Description of patients/subjects/participants
Description of control/comparison groups
Definition of the health problems/conditions under study
Description of interventions
Description of usual care
Description of clinicians/providers
Description of teams, roles and organization of care
Qualitative methods
Measurement tools used
Randomization including allocation concealment
Blinding procedure
Analysis methods – statistical
Analysis methods – qualitative
Analysis methods – mixed methods
Reporting effect sizes
Reporting uncertainty bands (e.g. confidence intervals)
Synthesis methods in systematic reviews or meta-analysis
Study registration
Relationship between researchers and patients/participants
Involvement of patients/communities and others in the research process
Other: _____

Response matrix				
Always	Most of the time	About half the time	Never	Not applicable not sure
○	○	○	○	○
○	○	○	○	○

Q25 Please share any other comments you have regarding reporting of primary care research.
What other problems do you see with the way primary care research is **reported** that are important or common but are not mentioned above?

Q17 What suggestions do you have to improve the **reporting** of primary care research?

Q19 What important topics have we left off this questionnaire?

Appendix 2. Table A. Comparison of published reporting guidelines with the categories of concern about primary care research reports expressed by survey respondents*

EQUATOR reporting guidelines		SURVEY CATEGORY - SUBCATEGORY†																										
		PLANNING RESEARCH			CONTEXT OF PC RESEARCH						RESEARCH METHODS			DISSEMINATION OF RESEARCH FINDINGS			IMPLICATIONS OF RESEARCH FINDINGS				IMPLEMENTATION OF RESEARCH	TRAINING	ETHICAL ISSUES				
Guideline	Reference	Research question	Types of interventions	Funding and infrastructure	Context	Patient population	Problem studied	Clinicians	Healthcare setting	Relationships	Methods	Study methods	Analytic Methods	Dissemination	Audience	Research Reporting	Publication process	Implications	Generalisability	Relevance	Impact	Implementation		Ethical Issues	COI	Funding COI	Author-ship	Ethical Research
CONSORT 2010 guidelines for reporting parallel group randomised trials	xx		5		14a	4a, 15			4b		3ab 6ab	7a, 8ab, 9, 10 11a, 13a, 14a	7b 12ab, 16			13ab, 17ab 18 - 20		22	21					23		25		
STROBE The Strengthening the Reporting of Observational Studies in Epidemiology - guidelines for reporting observational studies	xx	2				6a, 14a			5		7, 8	4, 5, 6ab, 10	9, 11 12abcde 17			13abc, 14ac, 15 16abc, 18 - 20		20	22							22		
PRISMA Preferred Reporting Items for Systematic Reviews and Meta-Analyses	xx	3, 4				17, 18					11, 13	8, 9, 11ab, 12	12, 14-16 19			20 - 25		26		24				5		27		
SPIRIT Defining standard protocol items for clinical trials	xx	6a	11abcd		13	10		10	9	10, 26a		7, 8, 13-15 16abc, 17ab 18ab, 19	20abc	31ac		12, 22								2ab 24 , 27	21a	4 , 5c, 28	31b	
STARD Items for Reporting Diagnostic Accuracy Studies	xx	3	10ab, 11			6, 20	21ab				5 12ab	13ab 22	14 -18 23, 24			4, 8, 9 19, 25 , 26		27								30		
CARE Clinical Case Reporting Guideline Development	xx	3a, 4	9a			5abcd 7	3c, 8d				9bc 10abcd					11abc				3b				13				
AGREE reporting of clinical practice guidelines	xx	2				3b					4, 5	7, 8, 10, 13			6	9, 11, 12, 17		15, 16, 20				18, 19, 21			23	22		
SRQR: reporting qualitative research	xx	4			7	12	3	6			5	10, 11, 13	14, 15			16, 17, 19		18						9	20	21		
SQUIRE Quality improvement studies	xx	6	8ab		7, 13c		3, 4, 5			8b	10abc	9ab	11ab, 15			13abcdef, 14ab 15abcde, 16bc		15c 17abcde						12		18		
PRISMA-P Reporting Items for Systematic review and Meta-Analysis Protocols	xx	7			6							8, 9 11bc, 12	14 15abcd 16			10, 13										5abc		
TRIPOD Transparent reporting of a multivariable prediction model for individual prognosis or diagnosis	xx					5bc, 13b	3a		5a		4b	4a, 7b 8, 9, 12	7a 10abcd			3b, 6b, 13ac, 14ab 15ab, 16-18 19ab, 21		20								22		
RIGHT Reporting Tool for Practice Guidelines in Health Care	xx	6, 10ab				7ab	5				11a	15-17	12		8a	13c, 14ac, 22		13ab, 21	8b			14b			19ab	18ab		
COREQ Consolidated criteria for reporting qualitative research	xx				16			1-2-3-4-5	14	6-8, 15	9-13 23, 28	17-22	24-27			29-32												
TIDieR Template for Intervention Description and Replication Checklist and Guide	xx		2 -4, 6 8-10					5	7																			

*Numbers in table cells come from the cited guidelines and note the items identified as matching the category from our survey. (See Table 3)
†The subcategory label is the same as the major category label for general items that do not fit into more specific subcategories
†† Guideline references, see table B.
Blank columns are omitted in this table, those where no EQUATOR guidelines addressed the survey topic: ethical research, funding and infrastructure, impact, publication process, and training.

Appendix 2. Table B. EQUATOR Guideline references.

Reference Number	Guideline	Reference
1	CONSORT 2010 guidelines for reporting parallel group randomised trials	Moher D, Hopewell S, Schulz KF, Montori V, Gøtzsche PC, Devereaux PJ, Elbourne D, Egger M, Altman DG, for the CONSORT Group. CONSORT 2010 Explanation and Elaboration: updated guidelines for reporting parallel group randomised trial. BMJ. 2010;340:c869.
2	STROBE The Strengthening the Reporting of Observational Studies in Epidemiology - guidelines for reporting observational studies	Vandenbroucke JP, von Elm E, Altman DG, Gotzsche PC, Mulrow CD, Pocock SJ, Poole C, Schlesselman JJ, Egger M. Strengthening the Reporting of Observational Studies in Epidemiology (STROBE): Explanation and Elaboration. PLoS Med. 2007;4(10):e297.
3	PRISMA Preferred Reporting Items for Systematic Reviews and Meta-Analyses	Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. BMJ. 2009; 339:b2535.
4	SPIRIT Defining standard protocol items for clinical trials	Chan A-W, Tetzlaff JM, Gøtzsche PC, Altman DG, Mann H, Berlin J, Dickersin K, Hróbjartsson A, Schulz KF, Parulekar WR, Krleža-Jeri K, Laupacis A, Moher D. SPIRIT 2013 Explanation and Elaboration: Guidance for protocols of clinical trials. BMJ. 2013;346:e7586.
5	STARD Items for Reporting Diagnostic Accuracy Studies	Bossuyt PM, Reitsma JB, Bruns DE, Gatsonis CA, Glasziou PP, Irwig L, LijmerJG Moher D, Rennie D, de Vet HCW, Kressel HY, Rifai N, Golub RM, Altman DG, Hooft L, Korevaar DA, Cohen JF, For the STARD Group. STARD 2015: An Updated List of Essential Items for Reporting Diagnostic Accuracy Studies.
6	CARE Clinical Case Reporting Guideline Development	Gagnier JJ, Kienle G, Altman DG, Moher D, Sox H, Riley D; the CARE Group. The CARE Guidelines: Consensus-based Clinical Case Reporting Guideline Development. BMJ Case Rep. 2013; doi: 10.1136/bcr-2013-201554.
7	AGREE reporting of clinical practice guidelines	Brouwers MC, Kerkvliet K, Spithoff K, AGREE Next Steps Consortium. The AGREE Reporting Checklist: a tool to improve reporting of clinical practice guidelines. BMJ. 2016;352:i1152.
8	SRQR: reporting qualitative research	O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. Standards for reporting qualitative research: a synthesis of recommendations. Acad Med. 2014;89(9):1245-1251.
9	SQUIRE Quality improvement studies	Ogrinc G, Davies L, Goodman D, Batalden P, Davidoff F, Stevens D. SQUIRE 2.0 (Standards for QUality Improvement Reporting Excellence): revised publication guidelines from a detailed consensus process.
10	PRISMA-P Reporting Items for Systematic review and Meta-Analysis Protocols	Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart LA. Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) 2015 statement. Syst Rev. 2015;4(1):1.
11	TRIPOD Transparent reporting of a multivariable prediction model for individual prognosis or diagnosis	Collins GS, Reitsma JB, Altman DG, Moons KG. Transparent reporting of a multivariable prediction model for individual prognosis or diagnosis (TRIPOD): The TRIPOD statement. Ann Intern Med. 2015;162(1):55-63.
12	RIGHT Reporting Tool for Practice Guidelines in Health Care	Chen Y, Yang K, Marušič A, Qaseem A, Meerpohl JJ, Flottorp S, Akl EA, Schünemann HJ, Chan ESY, Falck-Ytter Y, Ahmed F, Barber S, Chen C, Zhang M, Xu B, Tian J, Song F, Shang H, Tang K, Wang Q, Norris SL; for the RIGHT (Reporting Items for Practice Guidelines in Healthcare) Working Group. A Reporting Tool for Practice Guidelines in Health Care: The RIGHT Statement. Ann Intern Med. 2017;166(2):128-132.
13	COREQ Consolidated criteria for reporting qualitative research	Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. Int J Qual Health Care. 2007;19(6):349-357.
14	TIDieR Template for Intervention Description and Replication Checklist and Guide	Hoffmann T, Glasziou P, Boutron I, Milne R, Perera R, Moher D, Altman D, Barbour V, Macdonald H, Johnston M, Lamb S, Dixon-Woods M, McCulloch P, Wyatt J, Chan A, Michie S. Better reporting of interventions: template for intervention description and replication (TIDieR) checklist and guide. BMJ. 2014;348:g1687.

Appendix 3

Respondent Ratings of Frequency of Encountering Problems with the Reporting of Primary Care Research

Question*	R†	Never N (%)	Sometimes N (%)	About Half the Time N (%)	Most of the Time N (%)	Always N (%)	Summary: About half the time or more N (%)
A. Overall, how often does the reporting of primary care research cause problems for your work*							
	198	6 (3)	118 (59.6)	51 (25.8)	20 (10.1)	3 (1.5)	74 (37.4)
B. How often do reports of primary care research make it difficult for you to:*							
Assess the generalizability/transportability of the findings to my patients, practice or community	198	5 (2.5)	110 (55.6)	43 (21.7)	38 (19.2)	2 (1)	83 (41.9)
Identify specific actions that apply to primary care patient care/practice	200	10 (5)	109 (54.5)	41 (20.5)	37 (18.5)	3 (1.5)	81 (40.5)
Apply the findings to primary care policy	189	6 (3.2)	86 (45.5)	54 (28.6)	37 (19.6)	6 (3.2)	97 (51.3)
Apply the findings to primary care education	194	6 (3.1)	114 (58.8)	44 (22.7)	23 (11.9)	7 (3.6)	74 (38.1)
Apply the findings to further primary care research	193	17 (8.8)	116 (60.1)	36 (18.7)	20 (10.4)	4 (2.1)	60 (31.1)
Replicate research findings	168	6 (3.6)	79 (47)	37 (22)	39 (23.2)	7 (4.2)	83 (49.4)
Synthesize findings across studies	188	3 (1.6)	76 (40.4)	53 (28.2)	47 (25)	9 (4.8)	109 (58.0)
C. How often have you found reporting to be insufficient for these different types of primary care research? *							
Randomized Controlled Trials	164	6 (3.7)	87 (53.1)	37 (22.6)	29 (17.7)	5 (3.1)	71 (43.3)
Qualitative studies	170	9 (5.3)	77 (45.3)	63 (37.1)	15 (8.8)	6 (3.5)	84 (49.4)
Cohort studies	171	6 (3.5)	100 (58.5)	45 (26.3)	17 (9.9)	3 (1.8)	65 (38)
Mixed methods studies	163	4 (2.5)	84 (51.5)	46 (28.2)	26 (16)	3 (1.8)	75 (46)
Single arm intervention trials	145	5 (3.5)	75 (51.7)	35 (24.1)	24 (16.5)	6 (4.1)	65 (44.8)
Systematic Reviews	169	12 (7.1)	104 (61.5)	34 (20.1)	14 (8.3)	5 (3)	53 (31.4)
Meta-analysis	164	15 (9.2)	93 (56.7)	25 (15.2)	24 (14.6)	7 (4.3)	56 (34.1)
Case study research	146	15 (10.3)	84 (57.5)	21 (14.4)	20 (13.7)	6 (4.1)	47 (32.2)
Surveys	158	13 (8.2)	80 (50.6)	35 (22.2)	23 (14.6)	7 (4.4)	65 (41.1)
D. In general, how often is the reporting of primary care research problematic in these areas?*							
Potential conflicts of interest of researchers/authors	158	27 (17.1)	102 (64.6)	18 (11.4)	9 (5.7)	2 (1.3)	29 (18.4)
Role of funders in research and reporting	163	30 (18.4)	98 (60.1)	18 (11)	16 (9.8)	1 (0.6)	35 (21.5)
Authorship and relative contributions of research team members	157	30 (19.1)	82 (52.2)	27 (17.2)	15 (9.6)	3 (1.9)	45 (28.7)
Ethical conduct of research and institutional approval	163	67 (41.1)	84 (51.5)	7 (4.3)	4 (2.5)	1 (0.6)	12 (7.4)
E. How often do you see problems with the reporting of these components of primary care research?*							
Purpose and context of the research question	166	15 (9)	103 (62.1)	37 (22.3)	10 (6)	1 (0.6)	48 (28.9)
Theoretical underpinnings of the research	162	5 (3.1)	70 (43.2)	50 (30.9)	34 (21)	3 (1.9)	87 (53.7)
Selection of the clinical sites, clinicians or study locations	161	11 (6.8)	78 (48.5)	43 (26.7)	26 (16.2)	3 (1.9)	75 (46.6)
Description of place/setting of research	160	18 (11.3)	80 (50)	34 (21.3)	25 (15.6)	3 (1.9)	62 (38.8)
Selection of the patients/subjects/participants	163	11 (6.8)	90 (55.2)	40 (24.5)	20 (12.3)	2 (1.2)	62 (38)
Description of patients/subjects/participants	162	12 (7.4)	93 (57.4)	38 (23.5)	17 (10.5)	2 (1.2)	57 (35.2)
Description of control/comparison groups	161	11 (6.8)	99 (61.5)	33 (20.5)	18 (11.2)	0 (0)	51 (31.7)
Definition of the health problems/conditions under study	161	16 (9.9)	110 (68.3)	25 (15.5)	9 (5.6)	1 (0.6)	35 (21.7)
Description of interventions	162	13 (8)	101 (62.4)	32 (19.8)	15 (9.3)	1 (0.6)	48 (29.6)
Description of usual care	161	9 (5.6)	74 (46)	41 (25.5)	32 (19.9)	5 (3.1)	78 (48.4)
Description of clinicians/providers	163	8 (4.9)	79 (48.5)	46 (28.2)	23 (14.1)	7 (4.3)	76 (46.6)
Description of teams, roles and organization of care	161	4 (2.5)	71 (44.1)	48 (29.8)	33 (20.5)	5 (3.1)	86 (53.4)
Qualitative methods	159	6 (3.8)	96 (60.4)	42 (26.4)	13 (8.2)	2 (1.3)	57 (35.8)

Continued

Continued

Question*	R†	Never N (%)	Sometimes N (%)	About Half the Time N (%)	Most of the Time N (%)	Always N (%)	Summary: About half the time or more N (%)
Measurement tools used	160	10 (6.3)	96 (60)	42 (26.3)	11 (6.9)	1 (0.6)	54 (33.8)
Randomization including allocation concealment	148	8 (5.4)	100 (67.6)	25 (16.9)	13 (8.8)	2 (1.4)	40 (27)
Blinding procedure	154	7 (4.6)	97 (63)	33 (21.4)	15 (9.7)	2 (1.3)	50 (32.5)
Analysis methods – statistical	158	9 (5.7)	108 (68.4)	32 (20.2)	8 (5.1)	1 (0.6)	41 (25.9)
Analysis methods – qualitative	155	4 (2.6)	98 (63.2)	40 (25.8)	12 (7.7)	1 (0.7)	53 (34.2)
Analysis methods – mixed methods	151	5 (3.3)	88 (58.3)	43 (28.5)	14 (9.3)	1 (0.7)	58 (38.4)
Reporting effect sizes	153	5 (3.3)	72 (47.1)	49 (32)	26 (17)	1 (0.7)	76 (49.7)
Reporting uncertainty bands (e.g. confidence intervals)	152	11 (7.2)	95 (62.5)	34 (22.4)	11 (7.2)	1 (0.7)	46 (30.3)
Synthesis methods in systematic reviews or meta-analysis	143	6 (4.2)	90 (62.9)	34 (23.8)	12 (8.4)	1 (0.7)	47 (32.9)
Study registration	135	18 (13.3)	80 (59.3)	22 (16.3)	14 (10.4)	1 (0.7)	37 (27.4)
Relationship between researchers and patients/ participants	145	11 (7.6)	69 (47.6)	38 (26.2)	26 (17.9)	1 (0.7)	65 (44.8)
Involvement of pts/communities, others the research process	148	6 (4.1)	64 (43.2)	38 (25.7)	36 (24.3)	4 (2.7)	78 (52.7)

Online survey October 2018 to 2019.

*Answers were on a five-point Likert scale with frequency measures. Responses were not compulsory to move forward in the survey.

†R = For each question, "Respondents Answering," is the number of survey respondents who answered the question with Likert scale scores. "NA/Not Sure" responses are combined with no answers and are not shown. They total (Study n = 255) – Respondents Answering.

In each section, items are listed in rank order by percent, not in order of presentation on the questionnaire.